

## Non-Catalytic Self Healing Composite Material Solution, Phase I

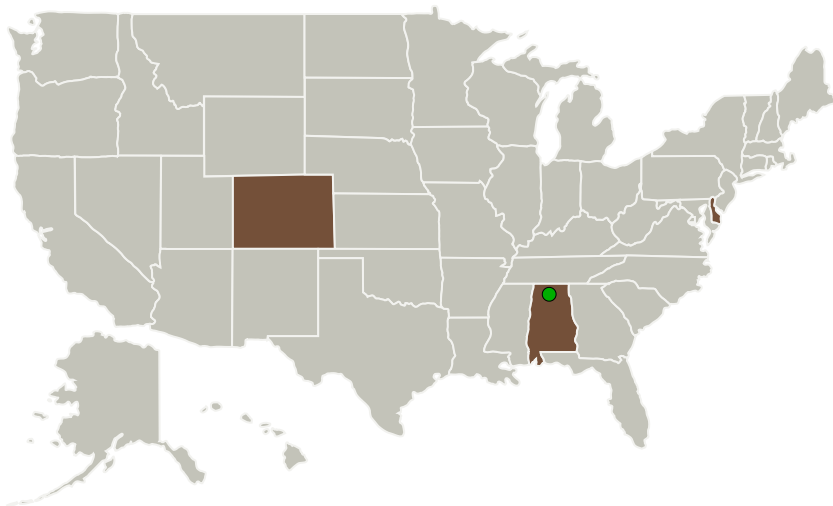
Completed Technology Project (2011 - 2012)



## Project Introduction

Fiber reinforce polymer (FRP) composite materials are seeing increasing use in the construction of a wide variety of aerospace structures. However, uncertainties regarding the material's impact durability continue to plague the FRP composites community. To address this need, ADA Technologies, Inc. (ADA), Littleton, CO, in partnership with the University of Delaware's Center for Composite Materials (UD-CCM), Newark, DE, propose the development of a novel, non-catalytic, fully passive, self-healing polymer for use as a fiber reinforced polymer (FRP) matrix material. If successful, the proposed technology will provide fully autonomous self-healing without the use of a catalyst. Further, while the proposed program is largely focused on demonstrating self-healing capabilities in FRP material form, the proposed technology is broadly applicable to next-generation polymer-based composites such as carbon nanotube reinforced composites (i.e., polymer nanocomposites).

## Primary U.S. Work Locations and Key Partners



Non-Catalytic Self Healing  
Composite Material Solution,  
Phase I

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Organizations Performing Work	Role	Type	Location
ADA Technologies, Inc.	Lead Organization	Industry	Littleton, Colorado
● Marshall Space Flight Center (MSFC)	Supporting Organization	NASA Center	Huntsville, Alabama
University of Delaware	Supporting Organization	Academia	Newark, Delaware

Primary U.S. Work Locations	
Alabama	Colorado
Delaware	

## Project Transitions

▶ **February 2011:** Project Start

✓ **February 2012:** Closed out

## Closeout Documentation:

- Final Summary Chart(<https://techport.nasa.gov/file/138363>)

## Organizational Responsibility

## Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

## Lead Organization:

ADA Technologies, Inc.

## Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

## Project Management

## Program Director:

Jason L Kessler

## Program Manager:

Carlos Torrez

## Principal Investigator:

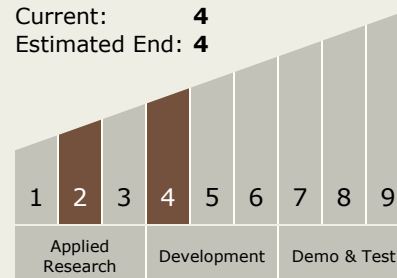
Steve Arzberger

## Technology Maturity (TRL)

Start: 2

Current: 4

Estimated End: 4



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## Technology Areas

### Primary:

- TX14 Thermal Management Systems
  - └ TX14.3 Thermal Protection Components and Systems
    - └ TX14.3.1 Thermal Protection Materials

## Target Destinations

The Moon, Mars, Outside the Solar System, The Sun, Earth, Others Inside the Solar System